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AF/17/14

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Lieder, et al.

Serial No.: 09/556,852

Filed: April 21, 2000

For: Gasoline-Oxygenate Blend and  
Method of Producing The Same

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Examiner: M. Medley

Group Art Unit: 1714

Attorney Docket No. 013129/00025

**TRANSMITTAL LETTER**

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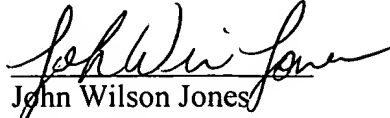
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Respectfully submitted,



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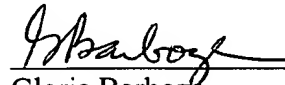
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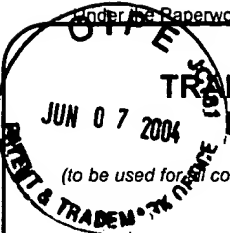
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 <b>TRANSMITTAL FORM</b> (to be used for correspondence after initial filing)	Application Number	09/556,852
	Filing Date	April 21, 2000
	First Named Inventor	Lieder, et al.
	Art Unit	1714
	Examiner Name	M. Medley
Total Number of Pages in This Submission	Attorney Docket Number	013129/00025

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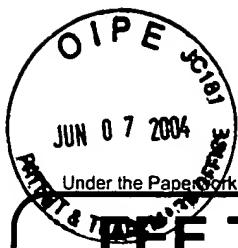
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☐ Applicant claims small entity status. See 37 CFR 1.27

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## Complete if Known

Application Number	09/556,852
Filing Date	April 21, 2000
First Named Inventor	Lieder, et al.
Examiner Name	M. Medley
Art Unit	1714
Attorney Docket No.	013129/00025

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## FEE CALCULATION

### 1. BASIC FILING FEE

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1001	770	2001	385	Utility filing fee	
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	

SUBTOTAL (1) (\$ )

### 2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

		Extra Claims	Fee from below	Fee Paid
Total Claims		-20** =	X	
Independent Claims		-3** =	X	
Multiple Dependent				

Large Entity		Small Entity		Fee Description
Fee Code	Fee (\$)	Fee Code	Fee (\$)	
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple dependent claim, if not paid
1204	86	2204	43	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) (\$ )

\*\*or number previously paid, if greater; For Reissues, see above

## FEE CALCULATION (continued)

### 3. ADDITIONAL FEES

Large Entity Small Entity

Fee Code	Fee (\$)	Fee Code	Fee (\$)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for <i>ex parte</i> reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	330.00
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
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1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	2809	385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

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## SUBMITTED BY

(Complete if applicable)

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Signature		Date	June 4, 2004		

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## **TABLE OF CONTENTS**

I.	REAL PARTY IN INTEREST.....	2
II.	RELATED APPEALS AND INTERFERENCES.....	2
III.	STATUS OF CLAIMS .....	2
IV.	STATUS OF AMENDMENT .....	2
V.	SUMMARY OF INVENTION.....	3
VI.	ISSUES .....	5
VII.	GROUPING OF THE CLAIMS.....	5
VIII.	ARGUMENTS.....	6
	A.    The Examiner Has Improperly Maintained the Rejection of Claims 1, 4-9, 13-18 and 21-29 Under 35 U.S.C. §102(b) Over <i>Jarvis</i> .....	6
	(i.) <i>Jarvis</i> Does Not Disclose the Stated Limitations of the Claims. ....	6
	(ii.)   Claims 5-6 and 14 Do Not Stand or Fall With the Other Claims. ....	9
	B.    The Examiner Has Improperly Maintained the Rejection of Claims 1-22 Under 35 U.S.C. §103(a) Over <i>Malfer</i> Combined with <i>Jessup</i> .....	9
	(i.)    The Combination of <i>Malfer</i> and <i>Jessup</i> Would Not Render the Claimed Limitations.....	9
	(ii.)   The Examiner Has Not Shown a Proper Motivation for the Combination of <i>Malfer</i> and <i>Jessup</i> .....	11
	(iii.)  The Combination of <i>Malfer</i> and <i>Jessup</i> Does Not Indicate a Reasonable Expectation of Success.....	12
	(iv.)   The Examiner Misquotes API Publication 4261. ....	13
	(v.)    Groupings of Claims 5-6 and 14; and 7 and 15 Do Not Stand or Fall With the Other Claims. ....	13
	C.    The Examiner Has Improperly Maintained the Rejection of Claims 1-29 Under 35 USC §103 over <i>Niebylski</i> and <i>Cunningham I</i> and <i>II</i> .....	14
	(i.)    The Combination of <i>Niebylski</i> and <i>Cunningham I</i> and <i>II</i> Does Not Render the Claimed Limitations. ....	14
IX.	CONCLUSION.....	16



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**Attorney Docket No.: 013129/00025**

Appellants hereby submit this Appeal Brief, in triplicate, with the requisite fee as set forth in 37 C.F.R. § 1.17(c). A Notice of Appeal was timely filed on April 5, 2004. This Appeal Brief is accordingly timely filed. The requisite fee set forth in 37 C.F.R. § 1.17(c) may be debited from the Deposit Account 12-1322 (Ref. No.: 013129/00025).

### **I. REAL PARTY IN INTEREST**

The real party in interest in this appeal is Shell Oil Company, a corporation formed under the laws of the State of Delaware, to whom this application has been assigned.

### **II. RELATED APPEALS AND INTERFERENCES**

No related appeals or interferences exist.

### **III. STATUS OF CLAIMS**

As originally filed, this application contained Claims 1-29. Claims 1-29 have been rejected by the Examiner, on grounds discussed herein. Accordingly, the claims on appeal are Claims 1-29. A copy of the claims on appeal is set forth in the *Appendix*. Each of these claims stands finally rejected for which Appellants bring the present appeal to the Board.

### **IV. STATUS OF AMENDMENT**

Claims 23, 24, 26 and 27 were amended in the Amendment, filed on August 24, 2001, and confirmed in Supplemental Amendment and Supplemental Information Disclosure Statement Under 37 C.F.R. § 1.97 (e)(2), filed on October 12, 2001. Claims 23 and 26 were further amended in Amendment and Response to Office Action of June 4, 2002, filed on October 4, 2002. No amendments were made subsequent to the final rejection of January 5, 2004. All amendments were made prior to the final rejection and have been entered into the record and considered by the Examiner.

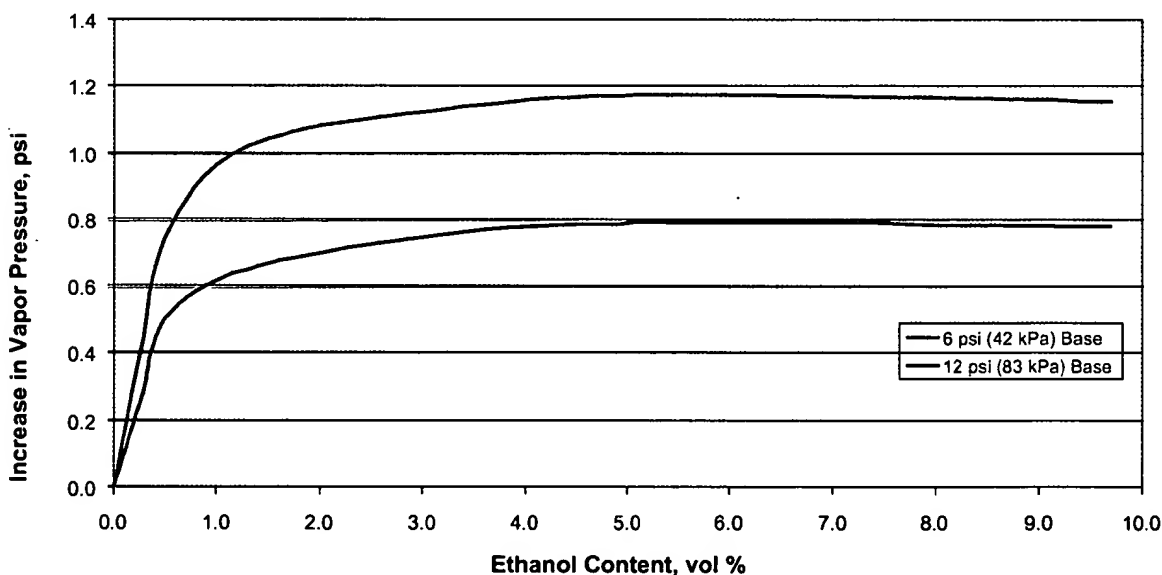


## V. SUMMARY OF INVENTION

Appellants' invention relates to novel gasoline-oxygenate blends suitable for use in automotive engines containing at least one alcohol. The relatively low boiling point of alcohols (e.g., the boiling point of ethanol is 78°C.), while being significantly higher than the initial boiling point of gasoline (approximately 30°C), is lower than the mid-boiling point of gasoline (approximately 100°C). The vapor pressure of neat alcohols is lower than that of gasoline. Consequently one would expect that blending an alcohol with gasoline would reduce the Reid Vapor Pressure ("RVP") (defined in ll. 5-8, p. 7) and somewhat increase mid-range volatility. However, when alcohol is blended with gasoline at concentrations up to around 30%, there is an unexpected increase in vapor pressure which causes the blend to have significantly higher RVP than the base gasoline. This is shown in FIG. 1 below for ethanol:

FIG. 1

**Effect of ethanol addition on Reid Vapor Pressure (RVP) at two levels of base fuel RVP**



The effect of alcohols, such as methanol and ethanol, on the increase in vapor pressure of a gasoline blend is further reported in Chapter 2 of API Publication 4261, a copy of which was attached to the Amendment and Response to Office Action of June 4, 2002, filed on October 4, 2002. Note in particular Figs. 9, 10 and 11. As clearly shown in Figure 9, the maximum RVP increase occurs at around 5-15 % v/v alcohol. This is the level of alcohol in most commercial blends. The resulting blend is often too volatile, unless base fuel volatility is adjusted to meet fuel specifications. Fig. 10 of API Publication 4261 further shows that the addition of 10 % v/v ethanol to a base fuel composition typically raises the RVP by about 1 PSI; the increase for 10% v/v methanol being almost 3 PSI.

Gasoline-oxygenate blends of gasoline formulations exhibiting the RVP and alcohol volume specifications recited in the claims of Appellants dramatically reduce (and in most instances, eliminate) the need for methyl t-butyl ether (MTBE) in gasoline formulations. In addition, the claimed gasoline-oxygenate blends provide increased percentile reductions of NO<sub>x</sub>, toxic pollutants and VOCs. Compare, for instance, the data for Percent Reduction (“% Red”) in NO<sub>x</sub>R, ToxR and VOCR in Table 9 for A2, C2, D2, E2, F2, I2, J2, L2, O2, Q2, R2 and S2 (outside of the claimed blends) versus A1, C1, D1, E1, F1, I1, J1, L1, O1, Q1, R1 and S1, respectively (within the claims of Appellants).

The novel compositions of Appellants meet RVP specifications *by adjustment to the base fuel composition*. Note, for instance, reference to the preferred butane percentile in the FFB (defined in ll. 26-27, p. 14 through l. 2, p. 15 of the specification). This, in turn, causes a reduction in the vapor pressure of the light components of the base gasoline. The addition of alcohol to the base gasoline renders a RVP within the claimed limitations. In one embodiment of the invention, the alcohol may be introduced to the base gasoline at a remote location, such as a

distribution terminal. This is often necessary since gasoline containing an alcohol cannot generally be shipped via common pipelines.

## **VI. ISSUES**

The issues on appeal are premised on the grounds of rejection set forth on pages 2-4 of the Final Office Action dated January 5, 2004. The issues are as follows:

1. Whether Claims 1, 4-9, 13-18 and 21-29 are anticipated under 35 U.S.C. § 102 (b) by U.S. Patent No. 5,679,117 (“*Jarvis*”).
2. Whether Claims 1-22 are unpatentable under 35 U.S.C. § 103 (a) over U.S. Patent No. 6,048,373 (“*Malfer*”) combined with U.S. Patent No. 5,288,393 (“*Jessup*”).
3. Whether Claims 1-29 are unpatentable under 35 U.S.C. § 103 (a) over U.S. Patent No. 4,317,657 (“*Niebylski*”) in view of U.S. Patent Nos. 5,551,957 (“*Cunningham I*”) and 5,679,116 (“*Cunningham II*”).

## **VII. GROUPING OF THE CLAIMS**

1. For purposes of the anticipation rejection under 35 U.S.C. § 102 (b) over *Jarvis*, the following Claims stand or fall together:
  - (a.) Claims 1, 4, 7-9, 13, 15-18, and 21-29; and
  - (b.) Claims 5-6 and 14.
2. For purposes of the obviousness rejection under 35 U.S.C. § 103 over the combination of *Malfer* and *Jessup*, the following Claims stand or fall together:
  - (a.) Claims 1-4, 8-13, and 16-22;
  - (b.) Claims 5-6 and 14; and
  - (c.) Claims 7 and 15.

3. For purposes of the obviousness rejection under 35 U.S.C. § 103 over the combination of *Niebylski* and *Cunningham I* and *Cunningham II*, all the Claims stand or fall together.

### **VIII. ARGUMENTS**

#### **A. The Examiner Has Improperly Maintained the Rejection of Claims 1, 4-9, 13-18 and 21-29 Under 35 U.S.C. §102(b) Over *Jarvis*.**

##### **(i.) *Jarvis* Does Not Disclose the Stated Limitations of the Claims.**

*Jarvis* does not anticipate any of Claims 1, 4-9, 13-18 or 21-29. To anticipate a claim, a reference must disclose every limitation of the claimed invention either explicitly or inherently.

*In re Schreiber*, 44 U.S.P.Q.2d 1429, 1431 (Fed. Cir. 1997).

*Jarvis* fails to disclose a *blend* of gasoline and oxygenate. *Jarvis* discloses a reaction product, not a blend, of gasoline and an oxygenate. Each of Claims 1, 4-9, 13-18 and 21-29 specifically recite a gasoline-oxygenate blend. Appellants provided Declaration of Charles A. Lieder, Ph.D., under 37 C.F.R. § 1.132, submitted with Response to Office Action of February 10, 2003, filed on April 9, 2003, which established that *Jarvis* was directed to a chemical reaction and not a blend. The Examiner has failed to address the conclusions reached by Dr. Lieder that *Jarvis* is drawn to a reaction product because *Jarvis* clearly:

(1) discloses the use of a platinum catalyst in “an elongated catalyzing chamber” (lines 25-27 of column 1 of *Jarvis*). Catalysts are used to accelerate chemical reactions and are not useful in blends of mixtures;

(2) characterizes his product as being derived from a “catalyzed mixture”;

(3) demonstrates a disparity in the reported physical properties of the products and the theoretical physical properties of the products (discussed below); and

(4) recites conditions characteristic of chemical reactions, as set forth in l. 25, col. 4 through l. 3., col. 5. See further paragraph 6 of Declaration of Dr. Lieder.

Further, in the Office Action of June 25, 2003 and the Final Office Action of January 5, 2004, the Examiner rendered the same verbatim conclusions on *Jarvis*, refusing to address the contentions raised by Appellants which were clearly taught in Dr. Lieder's Declaration:

Applicants' arguments with respect to the 102(b) rejection over *Jarvis* 5,679,117 is not convincing in that patentee clearly teaches that the 20% volume of new product containing 42.76% of alcohol is added to 80 octane gasoline producing a resulting mixture of 92.8 octane and vapor pressure in the range of 4 to 19 PSI column 5, lines 5-28 that anticipates the instant claims. *Jarvis* further teaches that the final product (pump gasoline) has a vapor pressure in the range from 6 to 8 PSI, note column 6, lines 26-28 that anticipates the instant claims and rebuts applicants' arguments and the Rule 132 Declaration of Lieder. (See fourth full paragraph on page 3 of Final Office Action of January 5, 2004 and last paragraph on page 3 of Office Action of June 25, 2003.)

Both of the issues raised by the Examiner were specifically discussed in the Declaration of Dr. Lieder. In particular, Dr. Lieder stated that, absent a chemical reaction, it would not be possible for the products of *Jarvis* to exhibit an RVP less than 7.1. The Examiner has repeatedly failed to provide a reason as to why the following points raised in Dr. Lieder's Declaration are insufficient to distinguish the claims over *Jarvis*:

(1) the theoretical Reid Vapor Pressure (RVP) value of the "final liquid product 60", assuming "final liquid product 60" is a blend, is approximately 37; thus, if the "final liquid product 60" is characterized as having a RVP less than 7.1, then the "final liquid product 60" must be a reaction product. Note specifically paragraph 7 of the Declaration of Dr. Lieder;

(2) the scientific impossibility that the "20% by volume of the new product to 80 octane gasoline", as a blend, has a "vapor pressure in the range of 4 to 19 pounds per square inch"; if the product has a RVP between 4 to 19 PSI, then the product must be a reaction product and not a blend;

(3) the theoretical RVP of a blended product containing one half natural gasoline and one half of ethanol is 16.66 PSI; a RVP between 1.5 and 8.0 PSI would only be possible if the product was referring to a reaction product, versus a blend. See the discussion in paragraph 8 of Declaration; and

(4) substitution of pentane for butane and/or use of a “light gasoline” or “straight run gasoline having an octane rating in the vicinity of 65 to 70” (lines 17-19 of column 6 of *Jarvis*) would require the “final product” of *Jarvis* to be a reaction product and not a blend. See the discussion in paragraph 9 of the Declaration. Note specifically paragraph 9 of the Declaration of Dr. Lieder.

The Examiner has not “rebutted” the arguments of Appellants nor the statements of Dr. Lieder; the Examiner has merely *ignored* them. Appellants’ Rule 132 Declaration establishes that *Jarvis* is neither obvious under 35 U.S.C. § 103 nor anticipatory under 102(b). The role of Rule 132 Declarations or Affidavits in resolving issues of patentability is well documented. See, for instance, *In re Fay*, 146 USPQ 47, 51 (CCPA 1965) (wherein in reversing the Board’s decision relating to the patentability of a gasoline formulation, the Court stated “one as well qualified in the highly technical art of fluoride-containing halogenated compounds as Henne [the affiant] is shown to be is properly entitled to express his expert opinion, and that such an opinion is entitled to be given consideration with the other evidence in the case in determining whether the conclusion of obviousness is supported by the opinion of the examiner as to what the prior art teaches. . . . we do not think the prior art teachings furnish factual support for the examiner’s position.” ).

Since *Jarvis* fails to disclose a *blend* of gasoline and oxygenate and since each of Claims 1, 4-9, 13-17 and 21-29 recite a RVP less than about 7.1 PSI and in light of the irrebutted

conclusions stated by Dr. Lieder in Declaration of Charles A. Lieder, Ph.D., the grounds of rejection over *Jarvis* should be reversed.

**(ii.) Claims 5-6 and 14 Do Not Stand or Fall With the Other Claims.**

Even if independent Claims 1, 18, 23 and 26 and dependent claims 4, 7-9, 13, 15-17, 21-22, 24-25 and 27-29 are anticipated by *Jarvis*, which they are not, Claims 5-6 and 14 are not anticipated by *Jarvis* and must be considered independently because *Jarvis* does not address the need for reducing toxic air pollutants emissions, much less provide a percentile amount for the reduction in toxic air pollutant emissions by the use of the disclosed hydrocarbons. Thus, Claims 5-6 and 14 are not anticipated by *Jarvis*.

Further, the Examiner has not argued that the rejection of Claims 5-6 and 14 is based on inherency and cannot now meet such a burden. *Ex parte Levy*, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Int. 1990) (the Examiner must show “a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.”).

**B. The Examiner Has Improperly Maintained the Rejection of Claims 1-22 Under 35 U.S.C. §103(a) Over *Malfer* Combined with *Jessup*.**

**(i.) The Combination of *Malfer* and *Jessup* Would Not Render the Claimed Limitations.**

The Examiner, in the Final Office Action, concludes that the combined teachings of *Malfer* and *Jessup* “teach the instant claimed gasoline-oxygenate blend having the same or overlapping range of RVP.” (First full paragraph of page 4 of Final Office Action.) Appellants disagree.

*Malfer* discloses a reformulated gasoline containing an alcohol and a “base fuel.” It is the reformulated gasoline which may “typically contain both hydrocarbons of the gasoline boiling range and fuel-soluble oxygenated blending agents, such as alcohols, ethers and other

suitable oxygen-containing organic compounds. Oxygenates suitable for use in the present invention include methanol, ethanol . . . Oxygenates, when used, will normally be present in the base fuel in an amount below about 25% by volume . . . .” Col. 5, ll. 19-35. *Malfer* does not disclose the RVP of the reformulated gasoline.

Formulated gasoline compositions containing an alcohol are not novel. As demonstrated above in the section entitled “Summary of Invention,” when an alkanol is blended with a base gasoline formulation, there is an *increase* in vapor pressure which causes the blend to have significantly higher RVP. API Publication 4261 establishes that the maximum RVP increase occurs at around 5 to about 15 percent volume/volume alcohol (which represents the level of alcohol in most commercial gasoline blends). Such blends are overly volatile. There is no reason to believe that the RVP of the reformulated blend of *Malfer* would be outside of the teachings of the prior art, i.e., API Publication 4261. The Examiner has provided no reason to refute the teaching of API Publication 4261. Blends having the claimed RVPs of Appellants would require adjustment of the base fuel. There is no disclosure in *Malfer* relating to adjustment of the base fuel.

*Jessup* does not cure the deficiencies of *Malfer*. *Jessup* does not disclose an alcohol containing gasoline formulation having a RVP less than 7.2 PSI nor the recited indices for the 10% distillation point and 50% distillation point. In fact, the *only* reference to “alcohol” or any specific alcohol in *Jessup* appears in line 61 of column 4 (“Gasolines are typically composed of mixtures of aromatics, olefins, and paraffins, although some gasolines may also contain such added nonhydrocarbons as alcohol (e.g., ethanol) or oxygenates (e.g., methyl tertiary butyl ether)”. How can the Examiner therefore conclude that *Jessup* cures the deficiencies of *Malfer*?



At best, the combination of *Jessup* and *Malfer* merely reinforces the teaching of API Publication 4261.

**(ii.) The Examiner Has Not Shown a Proper Motivation for the Combination of *Malfer* and *Jessup*.**

Even *assuming arguendo* that the combination of *Malfer* and *Jessup* would render the claimed limitations of Appellants, there is no motivation to combine the references. When considering an obviousness rejection, the Examiner cannot “pick and choose among the individual elements of assorted prior art references to recreate the claimed invention,” but rather, the Examiner must look for “some teaching or suggestion in the references to support their use in the particular claimed combination.” See *SmithKline Diagnostics, Inc. v. Helena Lab. Corp.*, 859 F.2d 878, 887 (Fed. Cir. 1988). The Examiner has not provided a proper motivation to combine the cited references.

*Malfer* and *Jessup* attempt to solve two different issues. *Jessup* is directed to “gasoline fuels which, upon combustion, minimize the release of CO, NO<sub>x</sub> and/or hydrocarbon emissions to the atmosphere.” (Col. 1, ll. 6-8). *Malfer* is directed to fuel compositions “for controlling intake valve deposits and minimizing valve sticking in spark-ignition internal combustion engines.” (Col. 1, ll. 6-9). The requisite motivation does not exist merely because both references are drawn to fuel compositions especially since the two references are directed to different objectives. The problems presented in the two references are distinctly different, such that one skilled in the art would not look to one for improvement of the other. If one of skill in the art wanted to go outside *Malfer* for assistance, they would not look to *Jessup*, which does not disclose or teach a better method for controlling intake valve deposits. *Pro-Mold and Tool Co. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1573 (Fed. Cir. 1996) (*citing ACS Hosp. Sys.*, 732 F.2d 1572, 1577 (Fed. Cir. 1984)). (“It is well established that before a conclusion of obviousness may

be made based on a combination of references, there must have been a reason, suggestion, or motivation to lead an inventor to combine those references.”)

**(iii.) The Combination of *Malfer* and *Jessup* Does Not Indicate a Reasonable Expectation of Success.**

*Assuming arguendo* that motivation exists to combine the cited references (which it does not), the Examiner’s rejection still must fail because the teachings of the references do not indicate a reasonable expectation of success. The proper standard for testing obviousness is set forth in *In re Vaeck*, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991):

Where claimed subjected matter has been rejected as obvious in view of a combination of prior art references, a proper analysis under § 103 requires, inter alia, consideration of two factors: (1) whether the prior art would have suggested to those of ordinary skill in the art that they should make the claimed composition or device, or carry out the claimed process; and (2) whether the prior art would also have revealed that in so making or carrying out, those of ordinary skill would have a reasonable expectation of success . . . . **Both the suggestion and the reasonable expectation of success must be founded in the prior art**, not in the applicant’s disclosure. (Emphasis added.)

There is no suggestion in *Malfer* to adjust the base fuel to render a gasoline-oxygenate formulation having a RVP of less than 7.2. Further, one of skill in the art would have no reason to conclude that the addition of an alkanol to the base formulation of *Malfer* would render a composition having a RVP less than 7.2. Clearly no argument could possibly be made, especially in light of API Publication 4261, that *Jessup* (which merely discloses the use of alcohol in a gasoline formulation while providing *no* indication as to how much alcohol should be employed) and *Malfer* (which fails to recite RVP but recites an alkanol) would refute the teachings of API Publication 4261.

In summary, the Examiner’s rejection over the combination of *Malfer* and *Jessup* must be reversed because (i.) there is no motivation to combine the references; (ii.) there is no reason to conclude a reasonable expectation of success by combining the references; and (iii.) even

assuming such motivation and reasonable expectation of success exists, the combination of *Malfer* and *Jessup* would not render the claimed limitations.

**(iv.) The Examiner Misquotes API Publication 4261.**

It is in the Final Office Action dated January 5, 2004 that the Examiner provides her first explanation as to the basis of the rejection:

The 103 rejection over claims 1-22 based on *Malfer et al* 6,048,373 combined with *Jessup et al* 5,288,393 are maintained because the combined teachings of the references teach the instant claimed gasoline-oxygenate blend having the same or overlapping range of RVP. The claims as drafted do not distinguish over the teachings of *Malfer* and *Jessup*. A review and study of the AP Publication 4261 clearly teaches that all alcohol are not the same, note that it is methanol that increases higher RVP wherein ethanol does not increase the RVP. The claims as drafted are not specific to ethanol and are not specific to proportion of ethanol. (First full paragraph of page 4 of Final Office Action.)

The Examiner is incorrect on all counts. The combined teachings of *Malfer* and *Jessup* do *not* teach the instant claimed gasoline-oxygenate blend for reasons stated *supra*. Second, the Examiner's statement that API Publication 4261 discloses that methanol, not ethanol, does not increase the RVP, is a misstatement of the facts. Note that the Examiner's position is *inconsistent* with the showing of Figure 9. Further, note the discussion relating to Figure 9 in the bridging paragraph of pages 8 and 10 of API Publication 4261: "Rather than lowering vapor pressure, methanol *and* ethanol cause increases in RVP as illustrated in Figure 9. Methanol . . . typically generates an increase in RVP of 3 PSI. . . . Ethanol produces RVP changes of about 1 PSI in a 9 PSI RVP gasoline. . . ."

**(v.) Groupings of Claims 5-6 and 14; and 7 and 15 Do Not Stand or Fall With the Other Claims.**

Even if independent Claims 1, 10 and 18 and dependent claims 2-4, 8-9, 11-13, 16-17, and 19-22 are rendered obvious by the combination of *Malfer* and *Jessup*, *each* of Claims 5-6

and 14; and Claims 7 and 15 would not be rendered obvious by the combination of *Malfer* and *Jessup*. Neither of *Malfer* nor *Jessup* disclose:

(1.) the claimed percentile in reduction of toxic air pollutants emissions (Claims 5-6 and 14); nor

(2.) the claimed oxygen weight percent (Claims 7 and 15).

Neither has the Examiner argued that the rejection of any of Claims 5-7 or 14-15 is based on inherency and cannot now meet such a burden. *Ex parte Levy, supra*.

**C. The Examiner Has Improperly Maintained the Rejection of Claims 1-29 Under 35 USC §103 over *Niebylski* and *Cunningham I* and *II*.**

**(i.) The Combination of *Niebylski* and *Cunningham I* and *II* Does Not Render the Claimed Limitations.**

*Niebylski* discloses a gasoline composition containing a cyclopentadienyl manganese antiknock agent. The sole reference to an “alcohol” in *Niebylski* appears in lines 1-2 of column 4 wherein it is stated that the composition “may further contain blending agents or supplements such as methanol, isopropanol, t-butanol and the like.” *Niebylski* does not discuss the RVP of the gasoline blend, much less the relationship of RVP and an alcohol.

Such deficiencies are neither cured by *Cunningham I* nor *Cunningham II*. Each of *Cunningham I* and *Cunningham II* merely discloses fuels which may contain an oxygenate. Note, for instance, lines 42-46 of column 15 of *Cunningham I* and lines 63-66 of column 26 of *Cunningham II*; the latter further discloses antiknock agents containing an alcohol (see lines 58-60 of column 10).

The Examiner in the Final Office Action concludes that the combined teachings of *Niebylski* and *Cunningham I* and *II* “teach the instant claimed gasoline-oxygenate blend having the same or overlapping range of RVP.” Note bridging paragraph of pages 3 and 4 of Final

Office Action. The *only* reference to Reid Vapor Pressure in *Cunningham I* and *Cunningham II* appears in Table II wherein it is reported that the *base fuel* has a Reid Vapor Pressure of 7.4. Fig. 10 of API Publication 4261, as discussed *supra*, shows that the addition of 10 % v/v ethanol to a base fuel composition typically raises the RVP by about 1 PSI; the increase for 10% v/v methanol being almost 3 PSI. Thus, since *Niebylski* does not disclose the RVP of the gasoline composition and since *Cunningham I* and *II* disclose a RVP of 7.4 for the *base fuel*, the combination of *Niebylski* and *Cunningham I* and *II* could not teach the claimed blend but, at best, a gasoline-oxygenate blend having a RVP of 8.4!

The fact that neither *Cunningham I* nor *Cunningham II* discloses Appellants' dependent claimed ranges relating to 10% and 50% distillation points does not translate to the conclusion that the fuel composition of the secondary references, when combined with the teachings of *Niebylski*, would render the claimed gasoline formulation of Appellants. One of skill in the art would have been unable to conclude that the combination of *Niebylski* and *Cunningham I* and/or *Cunningham II* would render a gasoline-oxygenate blend within the claimed limitations of Appellants.

## **IX. CONCLUSION**

The rejections of:

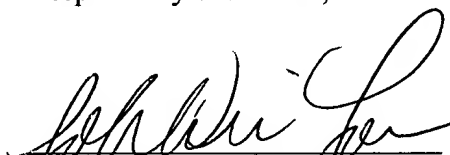
- Claims 1, 4-9, 13-18 and 21-29 under 35 U.S.C. § 102 (b) as being anticipated by *Jarvis*;
- Claims 1-22 under 35 U.S.C. § 103 (a) as being unpatentable over *Malfer* combined with *Jessup*; and
- Claims 1-29 under 35 U.S.C. § 103 (a) as being unpatentable over *Niebylski* in view of *Cunningham I* and *Cunningham II*

are improper for the reasons discussed herein. Accordingly, Claims 1-29 are in condition for allowance and the rejections of the Examiner should be REVERSED.

A decision of the Board consistent with this showing is earnestly requested.

Respectfully submitted,

Date: June 4, 2004

  
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## **CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop Appeal Brief – Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on June 4, 2004.

  
Gloria Barboza

**APPENDIX**  
**CLAIMS ON APPEAL**

1. A gasoline-oxygenate blend, suitable for combustion in an automotive engine, having the following properties:
  - (a) a Dry Vapor Pressure Equivalent less than about 7.1 PSI; and
  - (b) an alcohol content greater than about 5.8 volume percent.
2. The blend of Claim 1 wherein the blend has a 50% distillation point less than about 195°F.
3. The blend of Claim 1 wherein the blend has a 10% distillation point less than about 126°F.
4. The blend of Claim 1 wherein the blend has an anti-knock index greater than or equal to about 89.
5. The blend of Claim 1 wherein the blend is capable of reducing toxic air pollutants emissions by more than about 21.5%.
6. The blend of Claim 5 wherein the blend is capable of reducing toxic air pollutants emissions by more than about 30%.

7. The blend of Claim 1 wherein the blend has an oxygen weight percent that is greater than about 1.8 weight percent.
8. The blend of Claim 1 wherein the blend contains ethanol.
9. The blend of Claim 1 wherein the blend contains essentially no methyl t-butyl ether.
10. A gasoline-oxygenate blend, suitable for combustion in an automotive engine, having the following properties:
  - (a) a Dry Vapor Pressure Equivalent less than about 7.2 PSI; and
  - (b) an alcohol content greater than about 9.6 volume percent;.
11. The blend of Claim 10 wherein the blend has a 50% distillation point less than about 178°F.
12. The blend of Claim 10 wherein the blend has a 10% distillation point less than about 123°F.
13. The blend of Claim 10 wherein the blend has an anti-knock index greater than about 89.
14. The blend of Claim 10 wherein the blend is capable of reducing toxic air pollutants emissions by more than about 21.5%.



15. The blend of Claim 10 wherein the blend has an oxygen weight percent that is greater than about 1.8 weight percent.
16. The blend of Claim 10 wherein the blend contains ethanol.
17. The blend of Claim 10 wherein the blend contains essentially no methyl t-butyl ether.
18. A gasoline-oxygenate blend, suitable for combustion in an automotive engine having the following properties:
  - (a) a Dry Vapor Pressure Equivalent less than about 7 PSI; and
  - (b) an alcohol content greater than about 5.0 volume percent.
19. The blend of Claim 18 wherein the blend has a 50% distillation point less than about 250°F.
20. The blend of Claim 18 wherein the blend has a 10% distillation point less than about 158°F.
21. The blend of Claim 18 wherein the blend contains ethanol.
22. The blend of Claim 18 wherein the blend contains essentially no methyl t-butyl ether.
23. A process for preparing a gasoline-oxygenate blend comprising combining a blend of hydrocarbons with an alcohol, wherein the resulting gasoline-oxygenate blend has the following properties:

- (a) a Dry Vapor Pressure Equivalent less than about 7.1 PSI; and
  - (b) an alcohol content greater than about 5.8 volume percent.
24. The process of Claim 23 wherein the alcohol is ethanol.
25. The process of Claim 23 wherein the resulting blend contains essentially no methyl t-butyl ether.
26. A process for preparing a gasoline-oxygenate blend comprising combining a blend of hydrocarbons with an alcohol, wherein the resulting gasoline-oxygenate blend has the following properties:
- (a) a Dry Vapor Pressure Equivalent less than about 7.0 PSI; and
  - (b) an alcohol content greater than about 5.0 volume percent.
27. The process of Claim 26 wherein the alcohol is ethanol.
28. The process of Claim 26 further comprising introducing ethanol during the blending.
29. The process of Claim 26 wherein the resulting gasoline-oxygenate blend contains essentially no methyl t-butyl ether.